

Your ref:

Our ref: ADJ/DJM /11258

Date: 30th September 2021

Mr. M. Parrott
Jones Homes (Yorkshire) Limited
Green Bank House
Green Bank
Cleckheaton
BD19 5LQ

Dear Mike

Primrose Lane, Liversedge

In view of the initial test results, Waste Acceptance Criteria (WAC) testing was considered necessary.

Two samples of the Made Ground from the northern part of the site were tested. Virtually all the results were classed as an inert waste. However, for one sample the Total Organic Carbon Content (TOC) fell within the Hazardous Waste classification. The result was 8.1% (TP4), compared to a lower limit of 6%. The other result of 4.5% was classified as "Non-reactive Hazardous Waste".

Two samples of the topsoil were tested, and these recorded TOC of 8.3% and 15.7%, both of which would be classified as "Hazardous Waste".

However, it should be noted that a higher TOC may be permitted by the Environment Agency as an inert waste, dependent upon the Dissolved Organic Content.

It is therefore recommended that if the Made Ground in the northern part of the site, or the topsoil in the southern part of the site needs to be disposed of at landfill, the results are presented to the potential recipient landfill sites to determine tipping costs. The full results are attached.

Yours sincerely

A D Joyce

Enc.



Waste Acceptance Criteria Testing BS EN 12457-Part 3, 2 Stage Process



Sample Details

Contract Name Primrose Lane, Liversedge
 Lab Number 99942(2)-3
 Sample ID TP4 0.20m
 Date Sampled 18 August 2021
 Date Received 1 September 2021
 Particle Size (<4mm) -
 Method of size reduction N/A
 Non-crushable matter N/A

Test Values

Mass of Raw Test Portion (MW) kg 0.193
 Mass of Dried Test Portion (MD) kg 0.175
 Moisture Content Ratio (MC) % 10.11
 Dry Matter Content Ratio (DR) % 90.82
 Leachant Volume (1) (L2) Litre 0.332
 Leachant Volume (2) (L8) Litre 1.400
 Eluate Volume (1) (VE1) Litre 0.125
 Eluate Volume (2) (VE2) Litre 1.100

Eluate Analysis	Conc in Eluate	
	2:1	8:1
Liquid : Waste Ratio	2:1	8:1
pH (units)	9.1	8.3
Temperature (°C)	20	20
Conductivity (µS/cm)	196	47
Antimony (µg/l Sb)	0.58	0.35
Arsenic (µg/l As)	5.87	2.78
Barium (µg/l Ba)	21.7	5.7
Cadmium (µg/l Cd)	<0.07	<0.07
Chromium (µg/l Cr)	0.8	<0.2
Copper (µg/l Cu)	22.2	7.9
Lead (µg/l Pb)	3.2	1.7
Mercury (µg/l Hg)	0.026	0.010
Molybdenum (µg/l Mo)	2.3	1.5
Nickel (µg/l Ni)	5.5	2.0
Selenium (µg/l Se)	0.73	0.39
Zinc (µg/l Zn)	14	3
Chloride (mg/l Cl)	8.6	1.0
Fluoride (mg/l F)	0.3	0.3
Sulphate (mg/l SO ₄)	8.2	1.9
Total Dissolved Solids (mg/l TDS)	150	35
Phenol Index (µg/l PhOH)	<10	<10
Dissolved Organic Carbon (mg/l C)	19	6.3

Amount Leached		BS EN 12457-3 Limit Values mg/kg at L:S 10:1		
2:1 mg/kg	10:1 mg/kg	Inert Waste	Non-reactive Hazardous Waste	Hazardous Waste
0.001	0.004	0.06	0.7	5
0.012	0.030	0.5	2	25
0.043	0.068	20	100	300
<0.0002	<0.0007	0.04	1	5
0.002	<0.002	0.5	10	70
0.044	0.089	2	50	100
0.006	0.018	0.5	10	50
0.00005	0.00011	0.01	0.2	2
0.005	0.016	0.5	10	30
0.011	0.023	0.4	10	40
0.001	0.004	0.1	0.5	7
0.029	0.043	4	50	200
17	15	800	15000	25000
0.6	2.6	10	150	500
16	24	1000	20000	50000
300	432	4000	60000	100000
<0.02	<0.1	1		
38	72	500	800	1000

Waste Analysis	Units	Result			
Total Organic Carbon	% w/w	8.1	3%	5%	6%
Loss on Ignition	% w/w	13.4			10%
BTEX	mg/kg	<0.06	6		
PCBs (7 congeners)	mg/kg	<0.045	1		
TPH (C10 - C40)	mg/kg	136	500		
PAH (total)	mg/kg	1.21	100		
pH	pH units	7.2		>6	
Acid Neutralisation Capacity (pH4)	mol/kg	0.13		To be evaluated	
Acid Neutralisation Capacity (pH7)	mol/kg	0.01		To be evaluated	

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 Waste Acceptance Criteria testing is outside the scope of the laboratory's UKAS accreditation.

Comments

Authorised by:

J. Campbell

Name:

John Campbell

Report date:

28 September 2021

Position:

Director

Unit 6 Parkhead, Greencroft Industrial Park, Stanley, County Durham, DH9 7YB
 Tel 01207 528578 Email customerservices@chemtech-env.co.uk
 Vat Reg No. 772 5703 18 Registered in England number 4284013

Waste Acceptance Criteria Testing BS EN 12457-Part 3, 2 Stage Process



Sample Details

Contract Name Primrose Lane, Liversedge
 Lab Number 99942(2)-12
 Sample ID TP17 0.15m
 Date Sampled 23 August 2021
 Date Received 1 September 2021
 Particle Size (<4mm) -
 Method of size reduction N/A
 Non-crushable matter N/A

Test Values

Mass of Raw Test Portion (MW) kg 0.205
 Mass of Dried Test Portion (MD) kg 0.175
 Moisture Content Ratio (MC) % 16.87
 Dry Matter Content Ratio (DR) % 85.57
 Leachant Volume (1) (L2) Litre 0.320
 Leachant Volume (2) (L8) Litre 1.400
 Eluate Volume (1) (VE1) Litre 0.150
 Eluate Volume (2) (VE2) Litre 1.130

Eluate Analysis	Conc in Eluate	
	2:1	8:1
Liquid : Waste Ratio	2:1	8:1
pH (units)	8.8	8.1
Temperature (°C)	20	20
Conductivity (µS/cm)	104	33
Antimony (µg/l Sb)	1.39	0.79
Arsenic (µg/l As)	13.35	10.16
Barium (µg/l Ba)	12.9	8.7
Cadmium (µg/l Cd)	<0.07	0.17
Chromium (µg/l Cr)	1.9	1.3
Copper (µg/l Cu)	21.5	13.0
Lead (µg/l Pb)	11.7	10.8
Mercury (µg/l Hg)	0.118	0.065
Molybdenum (µg/l Mo)	2.9	2.0
Nickel (µg/l Ni)	2.8	1.8
Selenium (µg/l Se)	1.27	0.69
Zinc (µg/l Zn)	9	16
Chloride (mg/l Cl)	3.3	0.8
Fluoride (mg/l F)	0.3	0.3
Sulphate (mg/l SO ₄)	3.9	<1.7
Total Dissolved Solids (mg/l TDS)	80	25
Phenol Index (µg/l PhOH)	<10	<10
Dissolved Organic Carbon (mg/l C)	22	8.0

Amount Leached		BS EN 12457-3 Limit Values mg/kg at L:S 10:1		
2:1 mg/kg	10:1 mg/kg	Inert Waste	Non-reactive Hazardous Waste	Hazardous Waste
0.003	0.008	0.06	0.7	5
0.027	0.104	0.5	2	25
0.026	0.091	20	100	300
<0.0002	<0.0016	0.04	1	5
0.004	0.013	0.5	10	70
0.043	0.137	2	50	100
0.023	0.109	0.5	10	50
0.00024	0.00070	0.01	0.2	2
0.006	0.021	0.5	10	30
0.006	0.019	0.4	10	40
0.003	0.007	0.1	0.5	7
0.018	0.153	4	50	200
6.6	10	800	15000	25000
0.6	3.1	10	150	500
8	<19	1000	20000	50000
160	297	4000	60000	100000
<0.02	<0.1	1		
44	92	500	800	1000

Waste Analysis	Units	Result			
Total Organic Carbon	% w/w	8.3	3%	5%	6%
Loss on Ignition	% w/w	12.0			10%
BTEX	mg/kg	<0.06	6		
PCBs (7 congeners)	mg/kg	<0.045	1		
TPH (C10 - C40)	mg/kg	146	500		
PAH (total)	mg/kg	8.48	100		
pH	pH units	6.7		>6	
Acid Neutralisation Capacity (pH4)	mol/kg	0.11		To be evaluated	
Acid Neutralisation Capacity (pH7)	mol/kg	-		To be evaluated	

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Waste Acceptance Criteria Testing BS EN 12457-Part 3, 2 Stage Process



Sample Details

Contract Name Primrose Lane, Liversedge
 Lab Number 99942(2)-13
 Sample ID TP19 0.10m
 Date Sampled 23 August 2021
 Date Received 1 September 2021
 Particle Size (<4mm) -
 Method of size reduction N/A
 Non-crushable matter N/A

Test Values

Mass of Raw Test Portion (MW) kg 0.215
 Mass of Dried Test Portion (MD) kg 0.175
 Moisture Content Ratio (MC) % 22.84
 Dry Matter Content Ratio (DR) % 81.41
 Leachant Volume (1) (L2) Litre 0.310
 Leachant Volume (2) (L8) Litre 1.400
 Eluate Volume (1) (VE1) Litre 0.120
 Eluate Volume (2) (VE2) Litre 1.180

Eluate Analysis	Conc in Eluate	
	2:1	8:1
Liquid : Waste Ratio	2:1	8:1
pH (units)	8.5	8.0
Temperature (°C)	20	20
Conductivity (µS/cm)	56	25
Antimony (µg/l Sb)	1.78	1.23
Arsenic (µg/l As)	10.16	8.30
Barium (µg/l Ba)	9.0	6.7
Cadmium (µg/l Cd)	<0.07	<0.07
Chromium (µg/l Cr)	3.0	1.6
Copper (µg/l Cu)	20.4	13.2
Lead (µg/l Pb)	13.3	7.6
Mercury (µg/l Hg)	0.207	0.103
Molybdenum (µg/l Mo)	2.0	1.5
Nickel (µg/l Ni)	3.4	1.8
Selenium (µg/l Se)	1.25	0.68
Zinc (µg/l Zn)	17	8
Chloride (mg/l Cl)	2.7	1.6
Fluoride (mg/l F)	0.3	0.3
Sulphate (mg/l SO ₄)	2.7	<1.7
Total Dissolved Solids (mg/l TDS)	45	20
Phenol Index (µg/l PhOH)	<10	<10
Dissolved Organic Carbon (mg/l C)	14	6.2

Amount Leached		BS EN 12457-3 Limit Values mg/kg at L:S 10:1		
2:1 mg/kg	10:1 mg/kg	Inert Waste	Non-reactive Hazardous Waste	Hazardous Waste
0.004	0.013	0.06	0.7	5
0.020	0.084	0.5	2	25
0.018	0.068	20	100	300
<0.0002	<0.0007	0.04	1	5
0.006	0.017	0.5	10	70
0.041	0.137	2	50	100
0.027	0.080	0.5	10	50
0.00041	0.00110	0.01	0.2	2
0.004	0.015	0.5	10	30
0.007	0.019	0.4	10	40
0.003	0.007	0.1	0.5	7
0.034	0.086	4	50	200
5.4	16	800	15000	25000
0.5	2.9	10	150	500
5	<18	1000	20000	50000
90	217	4000	60000	100000
<0.02	<0.1	1		
28	67	500	800	1000

Waste Analysis	Units	Result			
Total Organic Carbon	% w/w	15.7	3%	5%	6%
Loss on Ignition	% w/w	20.5			10%
BTEX	mg/kg	<0.06	6		
PCBs (7 congeners)	mg/kg	<0.045	1		
TPH (C10 - C40)	mg/kg	154	500		
PAH (total)	mg/kg	5.51	100		
pH	pH units	6.0		>6	
Acid Neutralisation Capacity (pH4)	mol/kg	0.08		To be evaluated	
Acid Neutralisation Capacity (pH7)	mol/kg	-		To be evaluated	

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Waste Acceptance Criteria Testing BS EN 12457-Part 3, 2 Stage Process



Sample Details

Contract Name Primrose Lane, Liversedge
 Lab Number 99942(2)-18
 Sample ID WS7 0.10m
 Date Sampled 18 August 2021
 Date Received 1 September 2021
 Particle Size (<4mm) -
 Method of size reduction N/A
 Non-crushable matter N/A

Test Values

Mass of Raw Test Portion (MW) kg 0.185
 Mass of Dried Test Portion (MD) kg 0.175
 Moisture Content Ratio (MC) % 5.73
 Dry Matter Content Ratio (DR) % 94.58
 Leachant Volume (1) (L2) Litre 0.340
 Leachant Volume (2) (L8) Litre 1.400
 Eluate Volume (1) (VE1) Litre 0.160
 Eluate Volume (2) (VE2) Litre 1.140

Eluate Analysis	Conc in Eluate	
	2:1	8:1
Liquid : Waste Ratio	2:1	8:1
pH (units)	8.4	8.0
Temperature (°C)	20	20
Conductivity (µS/cm)	55	30
Antimony (µg/l Sb)	0.31	0.31
Arsenic (µg/l As)	1.89	1.24
Barium (µg/l Ba)	14.5	6.5
Cadmium (µg/l Cd)	<0.07	0.30
Chromium (µg/l Cr)	1.0	1.0
Copper (µg/l Cu)	10.8	6.8
Lead (µg/l Pb)	2.2	1.5
Mercury (µg/l Hg)	0.023	0.016
Molybdenum (µg/l Mo)	2.4	1.4
Nickel (µg/l Ni)	2.2	1.3
Selenium (µg/l Se)	0.46	0.21
Zinc (µg/l Zn)	8	4
Chloride (mg/l Cl)	1.3	0.7
Fluoride (mg/l F)	0.5	0.3
Sulphate (mg/l SO ₄)	3.2	<1.7
Total Dissolved Solids (mg/l TDS)	40	25
Phenol Index (µg/l PhOH)	<10	<10
Dissolved Organic Carbon (mg/l C)	12	<5

Amount Leached		BS EN 12457-3 Limit Values mg/kg at L:S 10:1		
2:1 mg/kg	10:1 mg/kg	Inert Waste	Non-reactive Hazardous Waste	Hazardous Waste
0.001	0.003	0.06	0.7	5
0.004	0.013	0.5	2	25
0.029	0.072	20	100	300
<0.0002	<0.0028	0.04	1	5
0.002	0.010	0.5	10	70
0.022	0.072	2	50	100
0.004	0.016	0.5	10	50
0.00005	0.00017	0.01	0.2	2
0.005	0.015	0.5	10	30
0.004	0.013	0.4	10	40
0.001	0.002	0.1	0.5	7
0.015	0.044	4	50	200
2.5	7	800	15000	25000
0.9	3.4	10	150	500
6	<18	1000	20000	50000
80	264	4000	60000	100000
<0.02	<0.1	1		
24	<56	500	800	1000

Waste Analysis	Units	Result			
Total Organic Carbon	% w/w	4.5	3%	5%	6%
Loss on Ignition	% w/w	8.7			10%
BTEX	mg/kg	<0.06	6		
PCBs (7 congeners)	mg/kg	<0.045	1		
TPH (C10 - C40)	mg/kg	148	500		
PAH (total)	mg/kg	0.77	100		
pH	pH units	7.5		>6	
Acid Neutralisation Capacity (pH4)	mol/kg	0.14		To be evaluated	
Acid Neutralisation Capacity (pH7)	mol/kg	0.02		To be evaluated	

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